Index of Contributors

Acree, J. A., 280-295 Aguirre, D. H., 443-444 Ahl, A. S., 255-268 Alexander, K. A., 345-349 Allan, S. A., 85-93 Allsopp, B. A., 17-23 Alsopp, M. T., 17-23 Alvarez, J. A., 117-127 Alvarez, V., 110-116 Anziani, O. S., 432-433, 443-444, 471-472 Applewhaite, L., 166-171 Aprelon, R., 412-420, 445-451 Arruda, R. P., 408-411 Aumont, G., 412-420, 421-431

Banerjee-Bhatnagar, N., 378-401 Bansse-Ilsa, L., 166-171 Barré, N., 64-76, 77-84, 412-420, 445-451, 452-465 Baruselli, P. S., 408-411 Bensaid, A., 185-197 Blackwell, J. H., 280-295 Blanchard, M. T., 333-344

Blouin, E. F., 157-165 Bokma, B. H., 94-99 Bolt, C. R., 378-401 Borel, H., 64-76

Bouix, J., 421-431 Brown, S. S., 350-358 Brown, W. C., 128-135

Buening, G. M., 117-127, 466-468 Burridge, M. J., 85-93

Caballero, M., 248-254
Camus, E., 35-45, 46-53, 64-76, 369-377
Canto, G. J., 117-127
Carter, G. R., 350-358, 359-368
Childers, A. B., 314-317
Chitko-McKown, C. G., 128-135
Cluff, C. W., 136-147
Com, J. L., 77-84
Crawford, T. B., 198-210
Crom, R. L., 303-313

Davis, W. C., 198-210 de la Vega, R., 227-232 Desquesnes, M., 166-171, 172-184 Diaz, G., 227-232 Du Plessis, J. H., 17-23

Edwards, W. L., 157-165 Eriks, I. S., 157-165 Fargetton, M., 445-451 Favre, J., 166-171 Fifi, J., 64-76 Figueroa, J. V., 117-127, 466-468 Fleury, J., 421-431 Forlano, M., 148-156 Fourgeaud, P., 64-76 Frenkel, J. K., 402-407

Gaido, A. B., 469-470
Galvin, T. J., 233-240, 241-247
Garris, G. I., 77-84, 452-465
Goff, W. L., 136-147
Gómez, F., 434-442
Gorham, J. R. 198-210
Greifer, J. K., 296-302
Gruner, L., 421-431
Guglielmone, A. A., 443-444, 469-470, 471-472

Herriandez, G., 248-254 Herrero, M. V., 100-109, 110-116 Hiraoka, M., 473-477 Hotzel, I., 128-135 House, C., 345-349 House, J. A., 333-344

Jaén, M., 100-109 Johnson, W. C., 136-147 Jongejan, F., 35-45

Kat, P. W., 345-349 Khang, J. V. T., 421-431 Knowles, D. P., 198-210 Kocan, K. M., 157-165

Ladeira, S. L., 359-368 LaRocco, M., 333-344 Levett, P. N., 369-377 Li, H., 198-210 Lieuw-a-Joe, R., 166-171 Llewellyn, M. E., 333-344

Madureira, E. H., 408-411 Mahan, S. M., 35-45 Maillard, J. C., 46-53, 185-197 Mandonnet, N., 421-431 Mangiafico, J., 345-349 Mangold, A. J., 469-470, 471-472 Martinez, D., 35-45, 185-197 Matheron, G., 46-53 McElwain, T. F., 128-135 Melendez, R. D., 148-156 Metcalf, H. E., 280-295 Molero-Filho, J. R., 408-411 Morzaria, S. P., 211-218 Mosqueda, J. J., 117-127 Mucciolo, R. G., 408-411 Murphy, K. E., 219-226

Naves, M., 46-53, 445-451 Neitz, A. W. H., 24-34 Nettles, V. F., 77-84 Norval, R. A. I., 85-93 Numa, G., 64-76

O'Toole, D., 198-210

Palmer, G. H., 128-135, 157-165 Parker, B. B., 402-407 Parris-Arron, M., 166-171 Pepin, L., 46-53 Pereira, D. B., 359-368 Pérez, E., 100-109, 110-116 Pérez, J. M., 434-442 Popham, T. W., 452-465 Poudevigne, F. A., 248-254, 434-442

Ramos, J. A., 117-127 Riet-Correa, F., 350-358, 359-368 Robertson, M. A., 219-226 Rodrigues, D. L., 473-477 Rodriguez, S. D., 128-135 Rose-Rosette, F., 64-76 Roy, P., 318-332 Ruef, B. J., 128-135 Ruff, G., 46-53 Ruiz-Martinez, I., 248-254, 434-442

Sheesley, D. J., 296-302 Sheikboudou, C., 445-451 Shen, D. T., 198-210 Simon, R., 412-420 Sonenshine, D. E., 85-93 Stott, J. L., 333-344 Sutmoller, P., 269-279

Tabachnick, W. J., 219-226 Uilenberg, G., 1-16

Van der Zeijst, B. A. M., 35-45 van Vliet, A. H. M., 35-45 Veit, H. P., 350-358 Viana, W. G., 408-411 Visintin, J. A., 408-411 Visser, E. S., 17-23 Vogel, A., 471-472 Vokaty, S., 166-171 Volpogni, M. M., 432-433, 471-472

Waladde, S. M., 211-218 Walker, K. D., 303-313 Walsh, B., 314-317 White, W. R., 303-313 Whittington, C. U., 369-377 Williams, J. C., 378-401 Wilson, A., 54-63 Wyatt, C. R., 136-147 Wyss, J. H., 233-240, 241-247

Young, A. S., 211-218 Yunker, C. E., 24-34

Subject Index

Abamectin, 443 larvicidal activity of, 443-444 Acaricides, 96 for Amblyomma variegatum, 85-91 application of, 60 choice of, 59-60 dose of, 72 in east coast fever, 55 registered, 71 Acrolein, 140 African carnivores, Rift Valley fever virus in, serum antibody for, 345-348 African horsesickness (AHS), 333 AgDT (antigen trapping-ELISA detection tests), 172-183 Aggregation-attachment pheromone tail-tag decoys, 86-91 AHS (African horsesickness), 333 Alcelaphine herpesvirus-1 (AHV-1), 198 Amazonas, Sus scrofa domestica endoparasitic resistance in, 473-477 Amblyomma hebraeum, 85 Amblyomma variegatum, 95, 452 acaricides for, 85-91 in Caribbean, 65-66, 77-82 cattle egrets as potential disseminators of, 80-81 development of computer model of population dynamics of, 456-464 eradication from Caribbean, 59-62 eradication from French Antilles, 64-75 factors of variation of infestation of, in Creole cattle in Guadeloupe, 445-451 feeding apparatus/responses of, 212 feeding responses of, 215 free-living stages, 453 host finding, 453-454 life cycle and environmental factors, 453-456 parasitic stages, 454-456 wildlife as hosts for, 77-78 Amblyomma vectors, 2-5 Amitraz, 60, 94 Anaplasma marginale, 117, 157-158 development of, bovine-derived antibodies and, 157-162 enrofloxacin and, 471-472 Anaplasmosis, 157-158, 471 Animal and Plant Health Inspection Service (APHIS), 298, 299, 300, 302 Animal health

global, international trade agreements and,

296-302

in international trade, risk assessment of, probabilistic scenario analysis for, 255-267 regionalization for, 256 risk assessment, 266 Animals and animal products, international trade in, application of risk assessment to, 280-294 Anocentor nitens, 95 Antigen trapping-ELISA detection tests (AgDT), 172-183 APHIS (Animal and Plant Health Inspection Service), 298, 299, 300, 302 Argentina, incidence of Cochliomyia hominivorax in, 432-433 Arthropod-borne diseases, 219 Arthropod vectors of diseases of livestock, research for, 223-224 Artificial feeding systems for ixodid ticks, 211-217 Attrition rate, 286 **B**-ELISA, 333-343 Babesia life cycle of, 148 sporokinetes, in Venezuela, 148-155 Babesia bigemina, 128-133 light microscopy diagnosis of kinetes, 469-470 Babesia bovis, 100 bovine antibody titers to, 113 in Costa Rica, epizootiologic instability against, 110-115 in vitro growth of, 137 light microscopy diagnosis of kinetes, 469-470 nitric oxide exposure on, 141-142 seroconversion to, in Costa Rica, 100-108 Babesiacides, 136-144 Babesial parasites, helper T cell responses against rhoptry-associated protein 1 of, 128-133 Babesiosis, 69, 128, 136 bovine, 110, 117 research, polymerase chain reaction in, 466-467 Baculovirus expression vectors, 319 Baculovirus system, multiple gene expression in, 318-331 Baculoviruses, recombinant, virulant virus challenge and, 327 Belize, eradicating screwworms from, 235-

Blocking ELISA, 333-343

Bluetongue attenuated vaccines, 220

Bluetongue disease

Culicoides variipennis and, 219-224 research needs for, 221-223 in United States, 220-221

Bluetongue virus (BTV), 318

production of proteins and structures of, 319-320, 321

BoLA (bovine leucocyte antigen) markers, 186-196

Bont ticks, see Amblyomma variegatum Boophilus microplus ticks, 94-98 hemolymph of, 469-470

larvae, age and weight relationship in, 227-231

Botfly myiasis due to Dermatobia hominis, 434-441

Bovine babesiosis research, polymerase chain reaction in, 466-467

Bovine-derived antibodies, development of Anaplasma marginale and, 157-162

Bovine embryo transfer, disease transmission by, risk assessment of, 269-279 Bovine genetics, importation of, 269-279

Bovine leucocyte antigen (BoLA) markers, 186-196

Bovine myiasis, incidence of, 432-433 Brazil, ovarian follicular dynamics in estrus cycle in buffalo in, 408-411

BTV, see Bluetongue virus

Buffalo in Brazil, ovarian follicular dynamics in estrus cycle in, 408-411

Caribbean, see also Lesser Antilles
Amblyomma variegatum in, 65-66, 77-82
eradication of Amblyomma variegatum
from, 59-62

eradication strategies in, 452-464 Carribean sheep sera, reactivity of, with

MAP1-B region, 40-41 Catarrhal fever virus, 198-208

Cattle

Creole, see Creole cattle identifying Pasteurella granulomatis from, 350-358

lechiguana in, Pasteurella granulomatis and Dermatobia hominis in, 359-368

Cattle egrets, 65, 453 as potential disseminators of *Amblyomma* variegatum, 80-81

Central America

animal population, 243

cattle population breakdown, 243 expansion animal units, 244

screwworm eradication program in, see Screwworm eradication program in Central America total producer benefits, 244, 245

Chlorfenvinphos, 60

Cochliomyia hominivorax, 233 bacteria associated with, 248-253

incidence of, in Argentina, 432-433 larva infestation, 443-444

Commodity risk, estimating, 291-294

Commodity risk factors, 281 Contaminated embyros, 273

Coprophagia, 405

Corelike particles (CLPs), 319
as vehicles for foreign immunogens, 327,
329

viral infection and, 326-327

Costa Rica

Babesia bovis in, epizootiologic instability against, 110-115

eradicating screwworms from, 238 seroconversion to *Babesia bovis* in, 100-108

Cowdria, 2

Cowdria ruminantium, 35-36 cell cultures infected with, 24-33 infection and transmission of, 215 MAP1 protein, 35-43

Cowdriosis, 3, 35

in Guadeloupe, genetic resistance of creole goats to, 46-52

Cox Proportional model, 103

Coxiella burnetii, antibody binding to, 395 Coxiella burnetii outer membrane protein oligomer, pore-forming activity of, 378-398

Creole cattle in Guadeloupe, factors of variation of infestation of Amblyomma variegatum in, 445-451

Creole goats, 46-47

genetic resistance to cowdriosis in Guadeloupe, 46-52

resistance to infection with trichostrongylids in Guadeloupe, 421-430

Culicoides variipennis, 220-221 bluetongue disease and, 219-224 research needs for, 221-223 Cumulative density function, 265

Deltamethrin, 60

Dermacentor andersoni, 160 Dermatobia hominis

botfly myiasis due to, 434-441 in lechiguana in cattle, 359-368

Dermatobiasis, 434

Dermatophilosis, 64, 66, 185-186

in Martinique, genetic marker of resistance to, 185-196

Destination risk factors, 281-282 Diamidine derivatives, 97 Disease transmission by bovine embryo transfer, risk assessment of, 269-279 Dispute settlement, 300-301

Dogs in transmission of Toxoplasma gondii,

402-406

Domestic pig endoparasitic resistance in Amazonas, 473-477

Dot-blot nucleic acid hybridization, 120-122 Double-capsid viruslike particles, synthesis of, 320, 322

East coast fever (ECF), 54
Effective temperature summings (ETS), 228
Egrets, cattle, see Cattle egrets
Ehrlichia, 2
heartwater and, 17-22

Ehrlichia sp. (Germishuys), 20 Ehrlichia sp. (Omatjenne), 21-22

El Salvador, eradicating screwworms from, 236, 237

ELISA, blocking, 333-343

Embryo transfer, bovine, disease transmission by, risk assessment of, 269-279
Endoparasitic resistance in Amazonas, do-

mestic pig, 473-477

Enrofloxacin, 471

Anaplasma marginale and, 471-472 Epizootiologic instability against Babesia bovis in Costa Rica, 110-115

Equilibrium method, 382-383

Equivalence, 298

Eradication program, wildlife infestations during, 78-80

Eradication strategies in Caribbean, 452-464 Estrus cycle in buffalo in Brazil, ovarian follicular dynamics in, 408-411

ETS (effective temperature summings), 228 Event tree (ET), 259-264

evidence for, 262

quantifying, 263-264 Evidence evaluation, 262-263

Fecal smells, 405

Ferry operations, hazard categorization of, methodology for, 304-306

Flumethrin, 60

FMD, see Foot-and-mouth disease Food safety, preharvest, 314-316

Foot-and-mouth disease (FMD), 269

for Panama, risk assessment of, 303-313 Foreign immunogens, CLPs and VLPs as vehicles for, 327, 329

Free Trade Areas for the Americas (FTAA), 296-302

French Antilles, Amblyomma variegatum eradication in, 64-75

French Guyana

epidemiologic study in, 169-170 trypanosome-antigen-ELISA in, 172-183 TRYPNET in, 166-170

FTAA (Free Trade Areas for the Americas), 296-302

Gammaherpesvirinae, 198

Gastrointestinal strongyloses, 412 GATT (General Agreement on Tariff and Trade), 255

GATT Uruguay Round Agreement, 296-302 General Agreement on Tariff and Trade (GATT), see GATT entries

Genetic marker of resistance to dermatophilosis in Martinique, 185-196

Glucose uptake, inhibition of, 394-395

Goat strongyles, 412-418

Goats, Creole, see Creole goats

Guadeloupe

cowdriosis in, genetic resistance of creole goats to, 46-52

Creole cattle in, factors of variation of infestation of Amblyomma variegatum in, 445-451

goat strongyles during dry season in, 412-418

tick eradication in, 67-75

trichostrongylids in, creole goat resistance to infection with, 421-430

Guatemala, eradicating screwworms from, 234-235

Guyana

epidemiologic study in, 169-170 TRYPNET in, 166-170

HACCP (hazard analysis and critical control points), 314-316

Haemonchus, 412, 415, 416, 417

Hazard analysis and critical control points (HACCP), 314-316

Hazard categorization of ferry operations, methodology for, 304-306

Heartwater, 17, 24, 35, 64, 66 bacteria associated with, 19-20

control of, 54-62

diagnosis of, 22 Ehrlichia and, 17-22

research on, 1-10 in Zimbabwe, 56-58

Helminthosis, 421

Helper T cell responses against rhoptry-associated protein 1 of babesial parasites, 128-133

Hemolymph of Boophilus microplus ticks, 469-470

Hemoparasite infection, multiple, 117-126

Hemoparasite information network, TRYP-NET, 166-170

Hemoparasites in ticks, vaccines against, 158-159

Honduras, eradicating screwworms from, 237, 238 Host-acquired immunity, 110-111

Hydrogen peroxide, 143

Imidocarb dipropionate, 97 Immunogens, foreign, CLPs and VLPs as vehicles for, 327, 329

Importation of bovine genetics, 269-279 Infectious embyros, 273

Information network, hemoparasite, TRYP-NET, 166-170

Integrated pest management (IPM), 94-98 International standards organizations, role of, 299

International trade, 255

agreements, global animal health and, 296-302

animal health in, risk assessment of, probabilistic scenario analysis for, 255-267 in animals and animal products, application of risk assessment to, 280-294 IPM (integrated pest management), 94-98

Ixodid ticks, 211

artificial feeding systems for, 211-217

Large-cell variant (LCV) envelopes, 379-380

Larvicidal activity of abamectin, 443-444 LCV (large-cell variant) envelopes, 379-380 Lechiguana, 359

in cattle, Pasteurella granulomatis and Dermatobia hominis in, 359-368

Leptospirosis, 369 serological surve

serological survey of, in Lesser Antilles, 369-377 Lesser Antilles, serological survey of lep-

tospirosis in, 369-377 Liposome-swelling assay for porin activity,

Liposome-swelling assay for porin activity, 382

Livestock, arthropod vectors of diseases of, research for, 223-224

Magnitude, defining, 264-266
Major antigenic protein, see MAP1 entries

MAP1 (major antigenic protein), 8 MAP1 antigens, recombinant, 36-43

MAP1 protein, Cowdria ruminantium, 35-43 MAP1-A region, 38

MAP1-B region, 38-43

reactivity of Carribean sheep sera with, 40-41

Martinique, 186

dermatophilosis in, genetic marker of resistance to, 185-196 tick eradication in, 67-75

Microscopic agglutination test (MAT), 370 Mongooses, 79

Multiple gene expression in baculovirus system, 318-331

Musca domestica, 248

Myiasis, 249

botfly, due to Dermatobia hominis, 434-441

bovine, incidence of, 432-433 screwworm, 434-441

NAFTA (North American Free Trade Agreement), 296-302

New World Screwworm, see Cochliomyia hominivorax

Nicaragua, eradicating screwworms from, 237-238, 239

Nitric oxide exposure on Babesia bovis, 141-142

Nitrogen intermediates, reactive (RNI), 136-144

Norms of reaction, 222

North American Free Trade Agreement (NAFTA), 296-302

NWS, see Cochliomyia hominivorax

OMP (outer membrane proteins), 378 Orbiviruses, 318

Outer membrane protein oligomer, *Coxiella burnetii*, pore-forming activity of, 378-398

Outer membrane proteins (OMP), 378 Ovarian follicular dynamics in estrus cycle

in buffalo in Brazil, 408-411 Oxygen intermediates, reactive (ROI), 136-144

Oxytetracycline, 97

Panama

eradicating screwworms from, 238-239 foot-and-mouth disease for, risk assessment of, 303-313

PAO (polyamine oxidase), 136-144 Pasteurella granulomatis (Pg), 350 identifying, from cattle, 350-358 inoculation of, 360-362 isolates, 356

in lechiguana in cattle, 359-368 strains, 355

Pathogen transmission, study of, 211-217 Pg, see Pasteurella granulomatis Pheromone-baited acaracide-treated tags,

60-61

Pheromone tail-tag decoys, aggregationattachment, 86-91

Pig, domestic, endoparasitic resistance in Amazonas, 473-477

Polyamine oxidase (PAO), 136-144

Pore-forming activity of *Coxiella burnettii* outer membrane protein oligomer, 378-398

Porin activity, liposome-swelling assay for, 382

Porin channel, sizing, 391

Preharvest food safety, 314-316 Prevalence rate, estimating, 290

Probabilistic scenario analysis, 259-264 for risk assessment of animal health in in-

ternational trade, 255-267
Probability density functions, 264

Proportional Hazards Model, 103

Puerto Rico tick program, 94-98

Quantitative risk assessment (QRA), 282

RAP-1 (rhoptry-associated protein 1), of babesial parasites, helper T cell responses against, 128-133

RAP-1 T helper (Th) cell epitopes, 129 RDP (ribosomal database project), 17

Reactive nitrogen intermediates (RNI), 136-144

Reactive oxygen intermediates (ROI), 136-144

Recombinant baculoviruses, virulant virus challenge and, 327

Recombinant MAP1 antigens, 36-43 Regionalization, 256, 299

for animal health, 256

Research

for arthropod vectors of diseases of livestock, 223-224

for bluetongue disease, 221-223

bovine babesiosis, polymerase chain reaction in, 466-467

on heartwater, 1-10

Rhipicephalus appendiculatus, 55, 211 feeding apparatus/responses of, 213-214

Rhoptry-associated protein 1, see RAP-1 entries

Ribosomal database project (RDP), 17 Rickettsiales, relationships among, 17-19 Rift Valley fever virus (RVFV), 345

in African carnivores, serum antibody for, 345-348

Risk analysis, defined, 256

Risk assessment, 255, 257-259, 280 animal health, 266

in international trade, probabilistic scenario analysis for, 255-267 application of, to international trade in animals and animal products, 280-294

defined, 256

of disease transmission by bovine embryo transfer, 269-279

example of, 286-294

of foot-and-mouth disease for Panama, 303-313

interpreting, 266-267

quantitative (QRA), 282

Risk assessment models, 258-259

Risk classes, 283-284

Risk classification

rationale for, 282-285

of regions, 282-285

Risk communication, defined, 256

Risk management, 257 defined, 256

Risks, unrestricted, calculating, 285-286

RNI (reactive nitrogen intermediates), 136-144

ROI (reactive oxygen intermediates), 136-144

RVFV, see Rift Valley fever virus

Safety

defined, 256

food, preharvest, 314-316

Sanitary and Phytosanitary (S&P) Committees, 300

Sanitary and phytosanitary (SPS) provisions, 297-300

Sanitary and phytosanitary (SPS) rules, 296 Scent marking, 405

Screwworm, New World, see Cochliomyia hominivorax

Screwworm eradication program in Central America, 233-240

benefit/cost study, 241-247

Screwworm myiasis, 434-441
Serum antibody for Rift Valley fever virus in African carnivores, 345-348

SMT (sterile male technique), 249

Source area risk factors, 280-281

Source risk, estimating, 286, 288-291

Sporokinetes, Babesia, in Venezuela, 148-155

SPS, see Sanitary and phytosanitary entries

Sterile male technique (SMT), 249 Strongyles, goat, 412-418

Strongyloses, gastrointestinal, 412

Suriname

epidemiologic study in, 169-170

TRYPNET in, 166-170

Sus scrofa domestica endoparasitic resistance in Amazonas, 473-477

Tail-tag decoys, 86

aggregation-attachment pheromone, 86-91

Theileria mutans, infection and transmission of, 215

Theileria parva, 55

development of infections, 214-215 infections, 215-217

Tick-borne diseases, 54-62 effects of, 54

Tick counts

on cows, 450 individual effect on, 451 sire effect on, 450

on steers, 450

Tick eradication in Guadeloupe and Martinique, 67-75

Ticks

alternative methods of control of, 60-61 bont, see Amblyomma variegatum control of, 54-62 effects of, 54 examination of, 150

hemoparasites in, vaccines against, 158-159

infection and pathogen transmission, 212 ixodid, see Ixodid ticks very intensive control of, 55-56 water balance and, 96

Tilaran region of Costa Rica, 101 Time to event analysis, 103

Toxoplasma gondii, dogs in transmission of, 402-406

Trade, international, see International trade Transparency, 299-300

Trichostrongylids in Guadeloupe, creole goat resistance to infection with, 421-430 Trichostrongylus, 412, 415, 416, 417 Trypanosoma brucei AgDT, 179-182 Trypanosoma congolense AgDT, 179-182 Trypanosoma evansi, 167-168

Trypanosoma vivax, 167 Trypanosoma vivax isolate IL 4007, 177-179

Trypanosome-antigen-ELISA in French
Guyana, 172-183

TRYPNET hemoparasite information network, 166-170

Trypnews, 169

United States, bluetongue disease in, 220-221
Unknown risk category, 283

Vaccines

bluetongue attenuated, 220 against hemoparasites in ticks, 158-159 Vanodine solution, 313

Unrestricted risks, calculating, 285-286

Venezuela, *Babesia* sporokinetes in, 148-155 Veterinary science, contribution of, 301-302 Viral infection, corelike particles and, 326-327

Virus challenge, virulant, recombinant baculoviruses and, 327

Viruslike particles (VLPs), 319 double-capsid, synthesis of, 320, 322 immunization of sheep with, 323-326 as vehicles for foreign immunogens, 327, 329

Water balance, ticks and, 96
Wildlife

as hosts for *Amblyomma variegatum*, 77-78 infestations during eradication program,

Xanthine catabolism, 139-140

78-80

Zimbabwe, heartwater in, 56-58 Zona pellucida (ZP), 270-271

